

ANALYTICAL RESULTS

Project: RCRA
Pace Project No.: 10316058

Sample: 507177 Lab ID: 10316058002 Collected: 07/28/15 08:50 Received: 07/29/15 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00065	1	07/30/15 10:07	07/30/15 18:53	7440-43-9	
Potassium	12.3 <i>IF</i>	mg/L	2.5	0.13	1	07/30/15 10:07	07/30/15 18:53	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0044	mg/L	0.00050	0.00011	1	07/30/15 10:10	07/31/15 16:58	7440-38-2	
Selenium	0.0045	mg/L	0.00050	0.00020	1	07/30/15 10:10	07/31/15 16:58	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	182	mg/L	6.0	3.0	5		07/29/15 19:53	16887-00-6	
Fluoride	0.69	mg/L	0.050	0.0036	1		07/29/15 16:16	16984-48-8	
Nitrate as N	4.2	mg/L	0.10	0.050	1		07/29/15 16:16	14797-55-8	
Sulfate	70.3	mg/L	1.2	0.60	1		07/29/15 16:16	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		08/04/15 18:16	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	0.040	mg/L	0.0050	0.0017	1		07/29/15 17:16		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: RCRA
Pace Project No.: 10316058

Sample: 507178 Lab ID: 10316058005 Collected: 07/28/15 10:10 Received: 07/29/15 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00065	1	07/30/15 10:07	07/30/15 19:04	7440-43-9	
Potassium	23.1 5.4	mg/L	2.5	0.13	1	07/30/15 10:07	07/30/15 19:04	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0090	mg/L	0.00050	0.00011	1	07/30/15 10:10	07/31/15 17:11	7440-38-2	
Selenium	0.0062	mg/L	0.00050	0.00020	1	07/30/15 10:10	07/31/15 17:11	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	595	mg/L	24.0	12.0	20		07/29/15 21:03	16887-00-6	
Fluoride	0.30	mg/L	0.050	0.0036	1		07/29/15 17:01	16984-48-8	
Nitrate as N	5.9	mg/L	0.10	0.050	1		07/29/15 17:01	14797-55-8	
Sulfate	407	mg/L	6.0	3.0	5		07/29/15 20:46	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		08/04/15 18:18	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	0.049	mg/L	0.0050	0.0017	1		07/29/15 17:19		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: RCRA
Pace Project No.: 10316058

Sample: 507180 Lab ID: 10316058008 Collected: 07/28/15 12:45 Received: 07/29/15 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00065	1	07/30/15 10:07	07/30/15 19:17	7440-43-9	
Potassium	29.0 44	mg/L	2.5	0.13	1	07/30/15 10:07	07/30/15 19:17	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.039	mg/L	0.00050	0.00011	1	07/30/15 10:10	07/31/15 17:25	7440-38-2	
Selenium	0.0038	mg/L	0.00050	0.00020	1	07/30/15 10:10	07/31/15 17:25	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	135	mg/L	6.0	3.0	5		07/29/15 22:26	16887-00-6	
Fluoride	0.53	mg/L	0.050	0.0036	1		07/29/15 17:47	16984-48-8	
Nitrate as N	35.6	mg/L	0.50	0.25	5		07/29/15 22:26	14797-55-8	
Sulfate	133	mg/L	6.0	3.0	5		07/29/15 22:26	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		08/04/15 18:21	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	0.38	mg/L	0.025	0.0087	5		07/29/15 17:30		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: RCRA
Pace Project No.: 10316058

Sample: 507600 Lab ID: 10316058003 Collected: 07/28/15 09:20 Received: 07/29/15 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00065	1	07/30/15 10:07	07/30/15 18:56	7440-43-9	
Potassium	12.6	mg/L	2.5	0.13	1	07/30/15 10:07	07/30/15 18:56	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0044	mg/L	0.00050	0.00011	1	07/30/15 10:10	07/31/15 17:03	7440-38-2	
Selenium	0.0045	mg/L	0.00050	0.00020	1	07/30/15 10:10	07/31/15 17:03	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	182	mg/L	6.0	3.0	5		07/29/15 23:03	16887-00-6	
Fluoride	0.69	mg/L	0.050	0.0036	1		07/29/15 16:31	16984-48-8	
Nitrate as N	4.2	mg/L	0.10	0.050	1		07/29/15 16:31	14797-55-8	
Sulfate	70.5	mg/L	1.2	0.60	1		07/29/15 16:31	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		08/04/15 18:16	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	0.038	mg/L	0.0050	0.0017	1		07/29/15 17:17		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: RCRA
Pace Project No.: 10316058

Sample: 507700 Lab ID: 10316058009 Collected: 07/28/15 13:55 Received: 07/29/15 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00065	1	07/30/15 10:07	07/30/15 19:23	7440-43-9	
Potassium	ND	mg/L	2.5	0.13	1	07/30/15 10:07	07/30/15 19:23	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	ND	mg/L	0.00050	0.00011	1	07/30/15 10:10	07/31/15 17:38	7440-38-2	
Selenium	ND	mg/L	0.00050	0.00020	1	07/30/15 10:10	07/31/15 17:38	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	ND	mg/L	1.2	0.60	1		07/29/15 18:02	16887-00-6	
Fluoride	ND	mg/L	0.050	0.0036	1		07/29/15 18:02	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.050	1		07/29/15 18:02	14797-55-8	
Sulfate	ND	mg/L	1.2	0.60	1		07/29/15 18:02	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		08/04/15 18:25	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	ND	mg/L	0.0050	0.0017	1		07/29/15 17:24		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

TECHNICAL REVIEW ACTION SUMMARY

TECHNICAL REVIEW ACTION SUMMARY
SDG 10316058

Arsenic

Cadmium J1, J+1

Potassium J2, J+2

Selenium J-1

If the field is left blank no actions or qualifications were necessary.

- J1 - Positive result is flagged as estimated (J) due to uncertainty at the low level.
- J2 - Result is flagged as estimated (J) due to non-compliant serial dilution reproducibility.
- J+1 - Positive result <2 PQL is flagged as estimated with the potential for high bias (J+) due to non-compliant CRI recovery.
- J+2 - Positive result is flagged as estimated with the potential for high bias (J+) due to non-compliant MS/MSD recoveries.
- J-1 - Result <2 PQL is flagged as estimated with the potential for low bias (J-) due to non-compliant CRI recovery.

SAMPLE ID CODES

SAMPLE SUMMARY

Project: RCRA
Pace Project No.: 10316058

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10316058001	507174	Water	07/28/15 08:05	07/29/15 09:30
10316058002	507177	Water	07/28/15 08:50	07/29/15 09:30
10316058003	507600	Water	07/28/15 09:20	07/29/15 09:30
10316058004	507154	Water	07/28/15 09:30	07/29/15 09:30
10316058005	507178	Water	07/28/15 10:10	07/29/15 09:30
10316058006	507173	Water	07/28/15 11:05	07/29/15 09:30
10316058007	507171	Water	07/28/15 11:55	07/29/15 09:30
10316058008	507180	Water	07/28/15 12:45	07/29/15 09:30
10316058009	507700	Water	07/28/15 13:55	07/29/15 09:30
10316058010	507172	Water	07/28/15 14:25	07/29/15 09:30
10316058011	507147	Water	07/28/15 16:05	07/30/15 10:00
10316058012	507148	Water	07/28/15 16:45	07/30/15 10:00
10316058013	507149	Water	07/28/15 17:40	07/30/15 10:00
10316058014	507128	Water	07/28/15 18:20	07/30/15 10:00
10316058015	507127	Water	07/29/15 07:45	07/30/15 10:00
10316058016	507126	Water	07/29/15 08:20	07/30/15 10:00
10316058017	507124	Water	07/29/15 09:00	07/30/15 10:00
10316058018	507131	Water	07/29/15 10:00	07/30/15 10:00
10316058019	507114 A,B,C	Water	07/29/15 11:10	07/30/15 10:00

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

LABORATORY CASE NARRATIVE

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: EPA 6010
Description: 6010 MET ICP
Client: FMC
Date: August 11, 2015

General Information:

19 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/56575

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10316058019

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2038938)
 - Potassium
- MSD (Lab ID: 2038939)
 - Potassium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: EPA 6010
Description: 6010 MET ICP, Dissolved
Client: FMC
Date: August 11, 2015

General Information:

1 sample was analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: EPA 6020
Description: 6020 MET ICPMS
Client: FMC
Date: August 11, 2015

General Information:

19 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3020 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved
Client: FMC
Date: August 11, 2015

General Information:

1 sample was analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3020 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: SM 4500F/C
Description: SM4500F-C Fluoride
Client: FMC
Date: August 11, 2015

General Information:

2 samples were analyzed for SM 4500F/C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: EPA 300.0
Description: 300.0 IC Anions
Client: FMC
Date: August 11, 2015

General Information:

19 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/24007

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10314966003,10316058010

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2034964)
 - Nitrate as N
- MS (Lab ID: 2035153)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 2034965)
 - Nitrate as N
- MSD (Lab ID: 2035154)
 - Chloride
 - Nitrate as N
 - Sulfate

QC Batch: WETA/24033

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10316058019,10316268001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2036737)
 - Chloride
 - Fluoride
 - Sulfate

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: EPA 300.0
Description: 300.0 IC Anions
Client: FMC
Date: August 11, 2015

QC Batch: WETA/24033

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10316058019,10316268001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2036739)
 - Chloride
 - Fluoride
 - Sulfate
- MSD (Lab ID: 2036738)
 - Chloride
 - Fluoride
 - Sulfate
- MSD (Lab ID: 2036740)
 - Chloride
 - Fluoride
 - Sulfate

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2036737)
 - Nitrate as N
- MSD (Lab ID: 2036738)
 - Nitrate as N

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: EPA 350.1
Description: 350.1 Ammonia
Client: FMC
Date: August 11, 2015

General Information:

19 samples were analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: RCRA
Pace Project No.: 10316058

Method: SM 4500-P E
Description: Phosphate, Ortho Low Level
Client: FMC
Date: August 11, 2015

General Information:

19 samples were analyzed for SM 4500-P E. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/24012

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10316058001,10316058010

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2035222)
- Orthophosphate as P

QC Batch: WETA/24034

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10316058011,10316058019

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2036822)
- Orthophosphate as P
- MSD (Lab ID: 2036823)
- Orthophosphate as P


Additional Comments:


This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CHAIN-OF-CUSTODY

	Document Name:	Document Revised: 23Feb2015
	Sample Condition Upon Receipt Form	Page 1 of 1
	Document No.: F-MN-L-213-rev.13	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt	Client Name: <u>FMC</u>	Project #: WO#: 10316058
	Courier: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client <input type="checkbox"/> Commercial <input type="checkbox"/> Pace <input type="checkbox"/> SpeedDee <input type="checkbox"/> Other: _____ Tracking Number: <u>8058 1698 0071</u>	 10316058

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: _____ Temp Blank? ☐ Yes ☐ No

Thermometer Used: ☐ 888A9130516413 ☒ 888A912167504 ☐ 888A0143310098 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 0.4 Cooler Temp Corrected (°C): 0.4 Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A
 Temp should be above freezing to 6°C Correction Factor: true Date and Initials of Person Examining Contents: 10/7/2015

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample # <u>1-10 Y₁ Y₁</u>
(HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____	

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Kahn Xiong

Date: July 29, 2015

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

DATA PACKAGE REPORT
SAMPLE DELIVERY GROUP
RCRA SDG
10316268

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10316268

Sample: 507104 Lab ID: 10316268007 Collected: 07/29/15 15:50 Received: 07/30/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	0.0017	mg/L	0.0030	0.00065	1	08/01/15 14:53	08/03/15 01:47	7440-43-9	
Potassium	313	mg/L	2.5	0.13	1	08/01/15 14:53	08/03/15 01:47	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.036	mg/L	0.00050	0.00011	1	08/01/15 14:37	08/07/15 04:06	7440-38-2	
Selenium	0.0031	mg/L	0.00050	0.00020	1	08/01/15 14:37	08/07/15 04:06	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	109	mg/L	12.0	6.0	10		07/30/15 23:44	16887-00-6	
Fluoride	2.9	mg/L	0.050	0.0036	1		07/30/15 22:34	16984-48-8	
Nitrate as N	19.0	mg/L	1.0	0.50	10		07/30/15 23:44	14797-55-8	
Sulfate	126	mg/L	12.0	6.0	10		07/30/15 23:44	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	3.2	mg/L	0.080	0.040	2		08/10/15 11:53	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	1.1	mg/L	0.050	0.017	10		07/30/15 16:34		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA

Pace Project No.: 10316268

Sample: 507108A Lab ID: 10316268013 Collected: 07/30/15 09:30 Received: 07/31/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP Analytical Method: EPA 6010C Preparation Method: EPA 3010									
Phosphorus	669	ug/L	100	12.9	1	08/07/15 11:54	08/11/15 09:54	7723-14-0	
Cadmium	ND	mg/L	0.0030	0.00065	1	08/02/15 15:28	08/06/15 17:33	7440-43-9	
Potassium	133	mg/L	2.5	0.13	1	08/02/15 15:28	08/04/15 23:23	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.021	mg/L	0.00050	0.00011	1	08/02/15 15:41	08/07/15 17:31	7440-38-2	
Selenium	0.014	mg/L	0.00050	0.00020	1	08/02/15 15:41	08/07/15 17:31	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	420	mg/L	12.0	6.0	10		08/01/15 00:38	16887-00-6	
Fluoride	0.47	mg/L	0.050	0.0036	1		07/31/15 16:49	16984-48-8	
Nitrate as N	18.6	mg/L	1.0	0.50	10		08/01/15 00:38	14797-55-8	
Sulfate	355	mg/L	12.0	6.0	10		08/01/15 00:38	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		08/12/15 15:55	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	0.63	mg/L	0.050	0.017	10		07/31/15 17:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 08/13/2015 11:06 AM

10316268

Page 27 of 57

27 of 1369

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10316268

Sample: 507113 Lab ID: 10316268003 Collected: 07/29/15 13:20 Received: 07/30/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	0.0017	mg/L	0.0030	0.00065	1	08/01/15 14:53	08/03/15 01:28	7440-43-9	
Potassium	21.1	mg/L	2.5	0.13	1	08/01/15 14:53	08/03/15 01:28	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.026	mg/L	0.00050	0.00011	1	08/01/15 14:37	08/07/15 03:48	7440-38-2	
Selenium	0.0034	mg/L	0.00050	0.00020	1	08/01/15 14:37	08/07/15 03:48	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	125	mg/L	2.4	1.2	2		07/31/15 00:03	16887-00-6	
Fluoride	0.45	mg/L	0.050	0.0036	1		07/30/15 21:34	16984-48-8	
Nitrate as N	9.2	mg/L	0.20	0.10	2		07/31/15 00:03	14797-55-8	
Sulfate	86.6	mg/L	1.2	0.60	1		07/30/15 21:34	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.40	0.20	10		08/10/15 16:04	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	0.24	mg/L	0.010	0.0035	2		07/30/15 16:33		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 08/13/2015 11:06 AM

10316268

Page 17 of 57

17 of 1369

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10316268

Sample: 507115 Lab ID: 10316268001 Collected: 07/29/15 12:00 Received: 07/30/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	0.0097	mg/L	0.0030	0.00065	1	08/01/15 14:53	08/03/15 01:16	7440-43-9	
Potassium	20.0	mg/L	2.5	0.13	1	08/01/15 14:53	08/03/15 01:16	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.24	mg/L	0.00050	0.00011	1	08/01/15 14:37	08/07/15 03:39	7440-38-2	
Selenium	0.0038	mg/L	0.00050	0.00020	1	08/01/15 14:37	08/07/15 03:39	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	150	mg/L	6.0	3.0	5		07/31/15 02:48	16887-00-6	M1
Fluoride	1.1	mg/L	0.050	0.0036	1		07/30/15 16:46	16984-48-8	M1
Nitrate as N	172	mg/L	5.0	2.5	50		07/30/15 17:16	14797-55-8	M6
Sulfate	355	mg/L	6.0	3.0	5		07/31/15 02:48	14808-79-8	M1
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	0.088	mg/L	0.040	0.020	1		08/10/15 10:20	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	3.4	mg/L	0.10	0.035	20		07/30/15 16:29		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10316268

Sample: 507121A Lab ID: 10316268012 Collected: 07/30/15 08:50 Received: 07/31/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP Analytical Method: EPA 6010C Preparation Method: EPA 3010									
Phosphorus	814	ug/L	100	12.9	1	08/07/15 11:54	08/11/15 09:51	7723-14-0	
Cadmium	ND	mg/L	0.0030	0.00065	1	08/02/15 15:28	08/06/15 17:26	7440-43-9	
Potassium	61.1	mg/L	2.5	0.13	1	08/02/15 15:28	08/04/15 23:16	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0088	mg/L	0.00050	0.00011	1	08/02/15 15:41	08/07/15 17:27	7440-38-2	
Selenium	0.014	mg/L	0.00050	0.00020	1	08/02/15 15:41	08/07/15 17:27	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	509	mg/L	12.0	6.0	10		08/01/15 00:21	16887-00-6	
Fluoride	0.16	mg/L	0.050	0.0036	1		07/31/15 16:34	16984-48-8	
Nitrate as N	17.8	mg/L	1.0	0.50	10		08/01/15 00:21	14797-55-8	
Sulfate	400	mg/L	12.0	6.0	10		08/01/15 00:21	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		08/12/15 15:53	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	0.78	mg/L	0.050	0.017	10		07/31/15 17:01		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10316268

Sample: 507122 Lab ID: 10316268015 Collected: 07/30/15 11:00 Received: 07/31/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP Analytical Method: EPA 6010C Preparation Method: EPA 3010									
Phosphorus	10300	ug/L	100	12.9	1	08/07/15 11:54	08/11/15 10:13	7723-14-0	
Cadmium	0.00130	mg/L	0.0030	0.00065	1	08/02/15 15:28	08/06/15 18:13	7440-43-9	
Potassium	123	mg/L	2.5	0.13	1	08/02/15 15:28	08/10/15 09:09	7440-09-7	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.050	mg/L	0.00050	0.00011	1	08/02/15 15:41	08/07/15 17:36	7440-38-2	
Selenium	0.0080	mg/L	0.00050	0.00020	1	08/02/15 15:41	08/07/15 17:36	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	309	mg/L	12.0	6.0	10		08/01/15 00:56	16887-00-6	
Fluoride	0.066	mg/L	0.050	0.0036	1		07/31/15 17:34	16984-48-8	
Nitrate as N	18.6	mg/L	1.0	0.50	10		08/01/15 00:56	14797-55-8	
Sulfate	348	mg/L	12.0	6.0	10		08/01/15 00:56	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		08/12/15 16:00	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	10.5	mg/L	0.50	0.17	100		07/31/15 17:07		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 08/13/2015 11:06 AM

10316268

Page 29 of 57

29 of 1369

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10316268

Sample: 507123 A,B,C Lab ID: 10316268014 Collected: 07/30/15 10:15 Received: 07/31/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP Analytical Method: EPA 6010C Preparation Method: EPA 3010									
Phosphorus	573	ug/L	100	12.9	1	08/07/15 11:54	08/11/15 09:57	7723-14-0	
Cadmium	0.0047	mg/L	0.0030	0.00065	1	08/02/15 15:28	08/06/15 17:47	7440-43-9	
Potassium	26.4	mg/L	2.5	0.13	1	08/02/15 15:28	08/10/15 08:43	7440-09-7	M1
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.17	mg/L	0.00050	0.00011	1	08/02/15 15:41	08/07/15 17:49	7440-38-2	
Selenium	0.14	mg/L	0.00050	0.00020	1	08/02/15 15:41	08/07/15 17:49	7782-49-2	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	91.4	mg/L	1.2	0.60	1		07/31/15 15:03	16887-00-6	M1
Fluoride	0.95	mg/L	0.050	0.0036	1		07/31/15 15:03	16984-48-8	M1
Nitrate as N	2.8	mg/L	0.10	0.050	1		07/31/15 15:03	14797-55-8	M1
Sulfate	505	mg/L	12.0	6.0	10		07/31/15 19:50	14808-79-8	M6
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	3.5	mg/L	0.080	0.040	2		08/12/15 17:10	7664-41-7	M1
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	0.58	mg/L	0.050	0.017	10		07/31/15 17:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10316268

Sample: 507155 Lab ID: 10316268016 Collected: 07/30/15 12:00 Received: 07/31/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	0.0028	mg/L	0.0030	0.00065	1	08/02/15 15:28	08/06/15 18:19	7440-43-9	
Potassium	411	mg/L	2.5	0.13	1	08/02/15 15:28	08/10/15 09:16	7440-09-7	
6020 MET IC PMS Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.095	mg/L	0.00050	0.00011	1	08/02/15 15:41	08/07/15 17:40	7440-38-2	
Selenium	0.0048	mg/L	0.00050	0.00020	1	08/02/15 15:41	08/07/15 17:40	7782-49-2	
SM4500F-C Fluoride Analytical Method: SM 4500F/C									
Fluoride	0.18	mg/L	1.0	0.051	1		08/08/15 14:03	16984-48-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	193	mg/L	6.0	3.0	5		08/01/15 01:14	16887-00-6	
Fluoride	0.13	mg/L	0.050	0.0036	1		07/31/15 17:49	16984-48-8	
Nitrate as N	5.6	mg/L	0.10	0.050	1		07/31/15 17:49	14797-55-8	
Sulfate	246	mg/L	6.0	3.0	5		08/01/15 01:14	14808-79-8	
350.1 Ammonia Analytical Method: EPA 350.1									
Nitrogen, Ammonia	0.39	mg/L	0.040	0.020	1		08/12/15 16:01	7664-41-7	
Phosphate, Ortho Low Level Analytical Method: SM 4500-P E									
Orthophosphate as P	17.2	mg/L	1.2	0.44	250		07/31/15 17:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Date: 08/13/2015 11:06 AM

10316268

Page 30 of 57

30 of 1369